

*Leptoconops (Leptoconops) demeilloni*, a new  
species from the Cape Duneveld of South Africa  
(Diptera, Ceratopogonidae).

by

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The new species *Leptoconops (Leptoconops) demeilloni* is described and illustrated from both sexes collected in the southern Cape Duneveld of South Africa. Short comparative notes are given on the remaining six known species of Afrotropical *Leptoconops*.

Three new species of *Leptoconops* Skuse, 1899, subgenus *Holoconops* Kieffer, 1918, have recently been described from the Republic of South Africa (Clastrier, 1981). Now a fourth species of the subgenus *Leptoconops* is described. It is cordially named for Botha de Meillon in recognition of his many important contributions to medical entomology in Africa. The modified setae and apical spines of the tarsomeres are described only if present. All measurements are in microns. The terminology used by Clastrier & Coluzzi (1973) for the antennal sensory organs, is modified here as suggested by Wirth & Navai (1978). Apart from the above-mentioned modifications the definitive characters of the subgenus *Leptoconops*, as outlined by Clastrier & Coluzzi, are retained. In order to facilitate cross-reference and understanding of earlier descriptions the terminology adopted here is followed by the old French name in parentheses.

*Leptoconops* Skuse

Subgenus *Leptoconops* Kieffer

***Leptoconops (Leptoconops) demeilloni* sp. nov.**, Fig. 1A–E and Fig. 2A–H.

MALE. Head black. Eyes bare, widely separated along their entire length. Vertex with four bristles. Frons bare.

Antenna (Fig. 1A, C) has the basal segments strongly transverse and fused together with the more distal segments becoming progressively longer and separated

from one another. Segment XV is much longer than others, club-shaped and curved along its entire length; with numerous short sharp-tipped sensilla trichodea (soies ou poils épars) as well as sensilla basiconica (spinules sensorielles), and one subapical sensilla chaetica (soie noire subapicale). Verticils of antennal plume on all segments of flagellum long, strong and black up to segment XIV, weaker on XV; respective lengths of segments III–XV, 85–8–12–20–24–30–34–40–44–50–62–144–440.

Palpus (Fig. 1B). Segment III very long, narrow and cylindrical; basal half slightly swollen, bearing five to seven small sensory pits on inner margin. Segment IV is shorter and thinner than III, cylindrical or narrowed medially. The respective lengths of I + II, III and IV are 100–225–130.

Clypeus (Fig. 1A) strongly convex, prominent, having apically a narrow median area without pigmentation. Two or three setae are borne on each side as well as one or two on the baso-median part. Proboscis (Fig. 1A) very long, not pointing in the general direction of the face, but backwards and at the level of the clypeus forms an obtuse angle with the face.

Thorax entirely black. Mesonotum without peculiarities; three or four postero-lateral bristles arranged in a straight line. Scutellum bearing on each side a row of four to five long and rather close bristles; medially bare. Pleuron with no setae on anepisternum. Wing as usual in this genus. Measurements: length 1992, breadth 600. Haltere smoky grey.

Legs entirely black. All segments are cylindrical and adorned with strong, long spinulosity. Foreleg with a row of about 20 black spines on the basitarsus, and a single apical spine on the first three tarsomeres. Middle leg with two rows of very long, but relatively weak bristles on the femur, and a pair of strong apical spines on first three tarsomeres.

Hindleg. The femur and tibia have two or three rows of long but relatively weak bristles. Tibial comb with four teeth; the first tooth from the spur is extremely

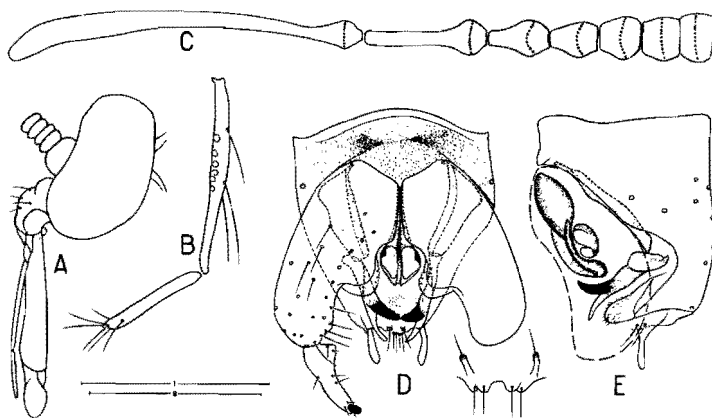


Fig. 1. *Leptoconops (L.) demeilloni* sp. nov., male. A. Lateral view of head. B. Ventral view of two distal segments of palp. C. Antennal segments IX–XV. D. Ventral view of genitalia and below it an enlarged view of posterior margin of tergite 9. E. Lateral view of genitalia. Scale: 1 = 0,5 mm (Fig. A); 2 = 0,2 mm (Figs B–E).

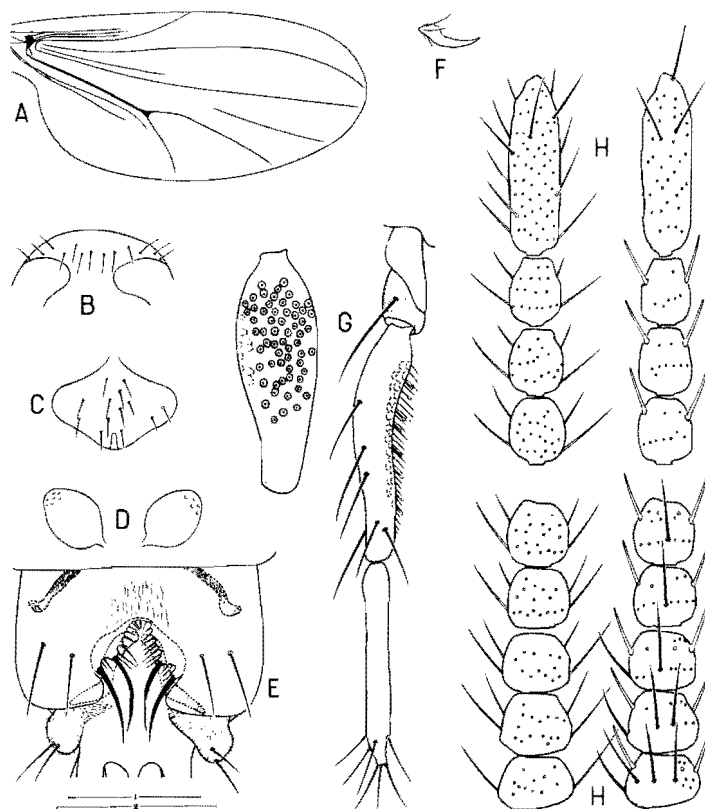


Fig. 2. *Leptoconops* (*L.*) *demeilloni* sp. nov., female. A. Wing. B. Space between eyes and arrangement of setae on vertex. C. Arrangement of setae on clypeus. D. Spermathecae. E. Ventral view of sternite 8 showing the extremities of the lateral arms of the ventral plate as well as the genital atrium and ventral extremities of segment 9. F. External tarsal claw. G. Right - ventral view of entire palp; left - inner aspect of third palpal segment. H. Left - internal face of antennal segments IV-VIII and XI-XIV; right - external face of same segments. Scale: 1 = 0,5 mm (Fig. A); 2 = 0,1 mm (Figs D-H); no scale (Figs B, C).

weak and sometimes absent, the following two teeth very long and strong, the fourth tooth, though shorter and thinner is of the same type. A single row of strong yellowish spines and one strong apical spine on the basitarsus; one pair of apical spines on the following two tarsal segments. Claws of the type generally seen i.e. long and equal, the external claw bearing basally a long spinulose bristle and the internal claw with a long, robust incurved barb in the same position. Each claw also bears two very small bristles inserted at base of convex margin.

Abdomen entirely black. Genitalia (Fig. 1 D, E). Medially the ninth sternite has a palely pigmented triangular area which is densely spiculated up to the base of the

coxites. The more posterior spiculation is stronger than the basal one. Ninth tergite triangular, the posterior margin straight with well developed apicolateral processes being slightly concave medially; margin between two processes with two groups of three setae; the most internal seta of each group lies ventrally with remaining seta, though in close proximity, being dorsal; outermost seta is further removed and inserted in a long digitiform fleshy process normally found ventrally on tergite. The internal border of the basimere is excavated above the median callosity at a point in line with the apex of the aedeagus which is globular. Basal sclerite of parameres without peculiarities. Distal sclerite of parameres bifurcate; internal branch is elongated in shape, very darkly pigmented, slightly incurved with its surface rugose; medially it almost meets its counterpart of second paramere. The outer branch of the bifurcate sclerite is narrower, straight, not so dark as the internal branch, and when viewed ventrally is seen to point posteriorly in the general direction of the entire sclerite.

**FEMALE.** Similar to male with usual sexual differences.

Vertex with six or seven bristles irregularly aligned, and frons bare (Fig. 2B).

Antenna (Fig. 2H). Segments IV–VI at first strongly and then slightly transversal; the following up to XIII become progressively longer and narrower. Each of them bears two long, blunt-tipped sensilla trichodea (soies sensorielles) which are moderately stout and widely separated from each other. The small external face bears three to four sensilla chaetica (soies noires externes) on segments IV and V, one or two on VI and VII and one on VIII or IX; all segments bear some scattered short sensilla trichodea (poils hyalins). On the large internal face numerous short sensilla trichodea, some aligned others not, are scattered along the entire length of the segment and their length does not exceed the length of the segment on which they are found. Segment XIV is elongated and cylindrical becoming pointed and bears 5 sensilla chaetica (soies noires médianes) on its distal third as well as one subapical sensilla chaetica (soie noire subapicale); also there are numerous sharp-tipped sensilla trichodea (poiles hyalins) of which some are arranged in a basal whorl and the remainder scattered throughout the segment. No sensilla chaetica on segment I; entire antenna rather densely clothed with pubescence. Respective lengths of segments IV–XIV, 32–38–38–40–40–40–42–42–42–42–112.

Palpus (Fig. 2G). The very long segment III when viewed ventrally appears to be relatively narrow and almost doubly recurved in the shape of a very open S; viewed laterally it is strongly swollen on the basal two thirds, progressively narrowing to the apex; almost the entire internal margin carries numerous sensory pits. Respective lengths of I + II, III and IV are 68–148–126.

Clypeus (Fig. 2C). The general arrangement is the same as in the male, but the setae are more numerous in variable proportions and quite irregularly inserted. Mandibles armed with about 20 minute teeth, the more distal ones being better formed and separated from one another.

Wing (Fig. 2A) hyaline, slightly brownish around the basal veins, stigma included; relatively narrow with the distal margin of the stigma straight or slightly concave and joining the costa at a very sharp angle; radial cell ellipsoid, obvious; vein  $M_2$  widely interrupted basally; fork of M-Cu clearly anterior of end of costa. Measurements: length 1280, breadth 650, costal length 600. Haltere whitish.

Legs. Differ from those of the male as follows. Foreleg. One weak apical spine on the fourth tarsomere. Middle leg. No rows of long bristles on the femora. A pair of

apical spines on the first four tarsomeres. Hindleg. No rows of long bristles on the femora and tibiae. A pair of apical spines on tarsomeres two to four. The claws (Fig. 2F) are identical and similar to the external one of the male but with an additional weaker bristle near the strong spinulose one.

Abdomen (Fig. 2E). Immediately in front of the atrium, the integument of the eighth sternite bears irregular, pigmented, longitudinal striations. The atrium is as high as wide and on each side distally bears two long and strong curved setae which demarcate the posterior extremity. Anterior to these setae the margin of the atrium bears numerous shorter, sharp bristles which are longer the more distal they are from the central trough of the atrium. No such bristling is to be seen distal of the two long and strong curved setae. Behind the atrium, internally, lies a lamelliform darkly pigmented crescent-shaped structure whose shape more or less follows the curved border of the lateral margins of the atrium. Each of the ventral extremities of segment IX is shaped in a conical, densely pubescent lobe bearing apically a pair of moderately long bristles. These lobes face obliquely away from the median axis of the abdomen. Spermathecae (Fig. 2D) two, of equal size and small ( $45 \times 32$ ), pyriform and bearing apically a few clear, shallow cup-like depressions: necks short, well formed.

**MATERIAL EXAMINED.** Holotype ♂, Allotype ♀ labelled 'Rép. Afrique Sud, Riversdale Dist., Blombos, 12.x.1982, swarming in veld, E. M. Nevill coll.' Museum national d'Histoire naturelle, Paris. From a series of 30 ♂ and 30 ♀ found swarming in the veld at 'Blombos', Stilbaai; from Onderstepoort collection No. 45.82.

Paratypes. From Onderstepoort collection No. 45. 82, data as above, distributed as follows: 3 ♂ 2 ♀ Veterinary Research Institute, Onderstepoort; 2 ♂ 2 ♀ South African Institute for Medical Research, Johannesburg; 2 ♂ 2 ♀ United States National Museum, Washington; 2 ♂ 2 ♀ British Museum (Nat. Hist.), London; 20 ♂ 21 ♀ Museum national d'Histoire naturelle, Paris. From Onderstepoort collection No. 80. 90, labelled 'Rép. Afrique Sud, Riversdale Dist., Jongensfontein, Stilbaai, 14.x.1980, off milk cows, G. P. Kleinhans coll.' 2 ♀ Onderstepoort; 26 ♀ Paris. From Onderstepoort collection No. 81. 77, labelled 'Rép. Afrique Sud, S. Cape, Stilbaai, 30.ix.1981, off man, N. J. van Zyl coll.' 1 ♀ Onderstepoort; 2 ♂ 12 ♀ Paris.

We thank Dr John Ledger of the South African Institute for Medical Research for being able to examine the male specimen (Wellington, Cape Province, 21.xi.1952, A. D. Harrison) identified by De Meillon as the species *capensis*. It in fact, however, belongs to *L. demeilloni*.

Of the six known Afrotropical species a single one, *L. capensis* is entirely black including the legs. In the five others at least one part of the body or legs is paler. Following the original descriptions these species can be separated from *demeilloni* by the following characters: *L. capensis* de Meillon & Hardy, 1953. ♀ antennal segment XIV is twice the length of XIII, third segment of palp not swollen; fork of M-Cu situated at the same level as end of costa; haltere black; spermathecae elongated and cylindrical according to the original illustrations. *L. dixi* de Meillon, 1936. ♀ antennal segment XIV the same length as three preceding segments together. Thorax purplish; fork of M-Cu situated at same level as end of costa. Scutellum with only two lateral bristles on each side. *L. fuscipennis* Clastrier, Rioux & Descous, 1961. ♂ wing brownish on anterior part; abdominal segments with pale posterior margins; genitalia, especially the parameres, distinctive. *L. harrisoni* de Meillon & Hardy, 1953. In the ♀ the distal antennal segments paler than basal ones. Third palpal segment not swollen. Fork of M-Cu at

same level as end of costa. Abdomen sepia-tinted. Spermathecae elongated. In the ♂ the distal half of antennal plume pure white. Distal sclerites of parameres differently formed. *L. nicolayi* de Meillon, 1937. ♀ antennal segment XIV pointed and about four times longer than XIII. Segment III of palp not swollen. Fork of M-Cu situated at same level as end of costa. Tibiæ strongly swollen; tarsomere V same length as two preceding segments together. *L. rhodesiensis* Carter, 1921. ♀ antennal segments IV–XIII transversal and the major sensilla trichodea very close to each other on segments XII–XIV as figured by Carter. Three pairs of setae on the scutellum. Fork of M-Cu much distad of the end of the costa.

These six Afrotropical species of the subgenus *Leptoconops* have been re-described and figured by Clastrier (1984). This paper includes a key to the males and females based on characters used in the present description.

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